

The Relationship between Femininity and Sustainability Reporting

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ABSTRACT

Most research on corporate social responsibility (CSR) disclosure and stakeholder engagement with sustainable development has focused on the internal factors of corporations, leaving aside the characteristics of the institutional, cultural, and economic context of the country where corporations operate. The purpose of this study is to investigate the influence of femininity in the disclosure of sustainability information based on the Global Reporting Initiative (GRI) guidelines at a developed country context. We use three measures of the CSR information disclosure by country: the GRI reports per million of inhabitants, the GRI reports application level, and the percentage of GRI reports with external assurance. The results of this study show that countries with higher femininity orientation provide a higher quantity of sustainability reports, but do not provide higher quality sustainability reports. Copyright © 2017 John Wiley & Sons, Ltd and ERP Environment

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Introduction

WHY ARE THERE DIFFERENCES IN THE QUANTITY AND THE QUALITY OF SUSTAINABILITY REPORTS ISSUED IN COUNTRIES LIKE Australia and the United States? Both countries have a similar gross domestic product per capita (in 2015, Australia had 56,327 current US\$ and the United States had 55,836 current US\$). Both are countries with a common-law tradition. The Global Reporting Initiative (GRI) reports released by organizations in the United States double the GRI reports in Australia, but the population of the United States is 13.5 times greater than that of Australia. In addition, the application level GRI reports and the percentage of assurance are quite lower in the United States than in Australia.

Most corporate social responsibility (CSR) studies analyze the internal corporate characteristics, and have identified that the size, the type of industry, the financial performance, and the composition of the board of directors, among others, are factors that explain the differences in sustainability reporting. However, the political, economic, and cultural context of the countries where organizations reside also affects the disclosure of sustainability information, and yet little research has explored the differences in CSR disclosures among countries.

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The purpose of our study is to extend existing literature on CSR with the analysis of the external factors to the organization incorporating one dimension of the national culture, femininity-masculinity, controlling by size in terms of population, by economic conditions, and by the legal system of the country. To compare the information of sustainability among countries we have used the GRI reports because they are the generally accepted standard framework in sustainability information (Hedberg & von Malmberg, 2003).

We structure the remainder of the paper as follows. In the next section, we present a review of the literature and develop our hypotheses. Then, we present the research design and the results. In the last section, we discuss our conclusions and implications.

Literature Review and Hypotheses

The sociological new institutionalism considers that institutions are elements that explain the organizations' behavior and structure. Although the concept of an institution has been defined in diverse ways, according to North (1990) institutions are the formal rules (laws and governmental regulations) and informal constraints in a society (culture). This paradigm explains the changes in organizations primarily as a process of social legitimacy based on the concept of institutional isomorphism, and the three mechanisms through which it occurs: coercive, mimetic, and normative. In this context, DiMaggio and Powell (1983) argued that the external actors make their organizations increasingly similar in structure and behavior. Therefore, organizations located in the same environment will be most homogeneous in their characteristics.

Institutional theory allows us to understand the differences in CSR strategies at a macro-level. Institutions vary across countries and can enable and constrain the degree to which stakeholders influence CSR practices (Campbell, 2006). In short, economic conditions affect corporate CSR, but institutional conditions are also determinant (Campbell, 2007).

The cultural system is a key feature of national institutional frameworks (Matten & Moon, 2008). Although there are various studies that offer measurements of national culture (House *et al.*, 2004), the cultural dimensions of Hofstede (1980) are the most used by researchers. One of these dimensions is the masculinity-femininity of a society, which is the degree to which masculine values, such as the ambition, power, and materialism prevail over feminine values, such as quality of life and emphasis on personal relationships.

This paper focuses only on the masculinity/femininity dimension among other aspects of personality and culture for two reasons. On the one hand, because this cultural dimension has been one of the most important topics in previous research on CSR at the corporation level and our paper aims to expand the analysis at the country level. On the other hand, we are convinced that gender diversity is the cultural variable that has one of the greatest effects on the dissemination of sustainability because political institutions can influence this cultural dimension and, therefore, support greater female participation in all activities of the society.

The literature seems to confirm that men and women are different in their personality and social behaviors. Brody (1985) indicates that the differences between men and women may be a function of different socialization processes, because there are gender differences in several emotional areas. Hyde (2014) conducted a meta-analysis and concluded that males and females are similar on most, but not all, psychological variables. There are exceptions in dimensions such as agreeableness, extraversion, interest in things versus people, and physical aggression. The meta-analysis of Konrad *et al.* (2000) indicates that men consider earnings and responsibility to be more important, whereas women consider prestige, challenges, and job security more important.

However, the studies that examine the relationship between gender and ethical attitudes are not conclusive. Ruegger and King (1992) find that females are more ethical than males in their perception of business ethical situations. Ameen *et al.* (1996) show that women tend to be more sensitive and less tolerant of unethical behavior than men. In contrast, Sikula and Costa (1994) report that women and men are ethically equivalent; women only differ on non-ethical values. Marques and Azevedo-Pereira (2009) suggest that men are stricter than women when making ethical judgments. Wang and Calvano (2015) indicate that women are more inclined to act ethically than men when they have not received business ethics education, but men who have had business ethics instruction are more likely than women to respond ethically.

The relationship of CSR with femininity has been investigated mainly using factors such as the gender composition of the board of directors and the cultural masculinity's dimension. About the effect of gender composition of the board in CSR, Boulouta (2013) finds that the proportion of women on the board of directors has a positive relationship with CSR, but the significance depends on the social performance metric used. Landry *et al.* (2014) find that the corporations listed on one or more of 'best' lists over CSR had a higher average representation of women on their boards. Setó-Pamies (2015), using the global ranking of the 100 most sustainable corporations, also confirms that the presence of women on the board has a positive influence on CSR. Kassinis *et al.* (2016) show companies that have more women on their boards of directors are more environmentally conscious. Similarly, Fernandez-Feijoo *et al.* (2014) find that boards with three or more women are determinants for CSR disclosure. However, Amran *et al.* (2014) suggest that the gender proportion of a board of directors is not associated significantly with the quality of sustainability reports in the Asia-Pacific.

Williams (1999) analyzes the relationship between the cultural dimension of masculinity and sustainability information and finds that firms operating in countries with more masculinity provide less environmental and social information. Van der Laan Smith *et al.* (2005) find that companies from Norway and Denmark – considered by Hofstede (1980) as two of the countries with the most femininity – have a higher quantity and quality of corporate social disclosures than companies from the United States. Similarly, Orij (2010) shows that companies in countries with higher masculinity have lower levels of corporate social disclosures. More recently, a study by García-Sánchez *et al.* (2016) shows a negative regression coefficient between a country's masculinity and the implementation GRI guidelines in the companies.

The effect of the masculinity also has been analyzed using other measures of CSR that are not the sustainability disclosure of information. Ringov and Zollo (2007) find that masculinity has a negative influence on a company's social and environmental performance. Scholtens and Sievänen (2013) investigate the differences in the socially responsible investing (SRI) in Nordic countries and their study shows that Norway and Sweden, that have more femininity than Finland and Denmark, are both SRI pioneers. Hur *et al.* (2016) and Jones *et al.* (2017) find that female consumers have higher perceptions toward CSR than male consumers. Thanetsunthorn (2015) shows that masculinity has a significantly negative association with CSR performance on employee and community dimensions, but there is no significant relationship with the environmental dimension. In addition to all this empirical evidence, Ho *et al.* (2012) find a positive relationship between masculinity and CSR that is inconsistent with the prediction they had initially established, although the authors of the study argue that this result could be caused by the endogeneity of the cultural dimension and the control variables used in their study.

In summary, the literature is quite consistent when establishing a negative relationship between CSR and masculinity in different countries, but it is important and necessary to note that CSR measures used in the studies are different from each other and that the comparisons between countries are set at the company level.

In our study, the 'countries with higher femininity orientation' are the countries with higher level of equality between women and men. In accordance with the revised literature, in our analysis of the level of gender equality in a country we have considered its political, economic, and cultural dimensions. The political area is measured by the presence of women in national parliaments. The economic dimension is measured with the labor market participation of women. The femininity culture in the country is valued with the Hofstede's dimension.

Before formulating our hypotheses, some formal definitions are necessary. In this paper, we define the 'quantity of sustainability reports' in a country as the number of sustainability reports issued by organizations (companies, non-profit services, public agencies, and universities) according to GRI guidelines and standardized by the number of inhabitants of the country.

Similarly, our paper defines the 'quality of sustainability reports' in a country by the level of disclosure of GRI reports and by the proportion of guarantees in GRI reports. We assume that the higher levels of application of the GRI guidelines are measuring the greater transparency and the quality of information. In addition, we argue that voluntary adoption of the external assurance of reports is a measure of the quality of GRI reports because this practice increases their credibility. The GRI application level as measure of CSR disclosure has been used in some recent studies (Ortas *et al.*, 2015; Alberici & Querci, 2016; Martínez-Ferrero *et al.*, 2016; García-Sánchez & Martínez-Ferrero, 2017). The assurance of GRI reports as a measure of quality of voluntary disclosure has been used by Moroney *et al.* (2012) and Herda *et al.* (2014).

For all these reasons, our hypotheses are the followings:

Hypothesis 1. *Countries with higher femininity orientation will provide a higher quantity of sustainability reports.*

Hypothesis 2. *Countries with higher femininity orientation will provide a higher quality of sustainability reports.*

Research Design

Sample and Data Sources

The sample used in this study includes 7,740 organizations that have released sustainability reports applying GRI (G3 and G3.1) guidelines in the period 2007–2012 in 30 countries of the OECD. In these guidelines, the quality of the reporting is presented on three application levels (C, B, and A). The reporting criteria at each level reflect a measure of the extent of application or coverage of the GRI reporting framework. Level C represents the small disclosures items and level A represents the highest disclosures. Additionally, a ‘plus’ (+) is available at each level (C+, B+, A+) if external assurance was used in the report.

We have excluded GRI G4 guidelines, adopted in 2013, because they use another application level and change the measure of the quality of the sustainability information. The G3 guidelines were released in 2006, but it is in 2007 when it was used in a greater proportion than G2 guidelines. Of the 35 countries of the OECD, we have eliminated five countries because they do not have at least one GRI report in every year over the period of study. Thus, the countries eliminated are Estonia, Iceland, Latvia, the Slovak Republic, and Slovenia. Tables 1 and 2 describe the final sample used to conduct our study. We collected our GRI information from GRI database (<https://database.globalreporting.org/>) and the dates of population from the World Bank (<https://data.worldbank.org/>).

Table 1 shows that the United States (13.27%), Spain (12.36%), South Korea (6.41%), and Australia (5.90%) are the countries with the higher percentage of GRI reports of the total of the sample. However, when the number of reports are standardized by millions of inhabitants, Table 1 shows that the United States is in position 24 (0.55), Spain is in position 8 (3.44), South Korea is in position 17 (1.67), and Australia position 7 (3.47). Similarly, Sweden (7.58), Luxembourg (6.840), Switzerland (5.88), and Finland (5.675) are in the top positions in GRI reports per million inhabitants.

Table 1 also shows the application level and the percentage of assurance of GRI reports. The countries with higher disclosures levels are Spain (5.36), Ireland (5.33), Italy (5.06), and South Korea (4.49). The sample mean of application level of GRI reports is 3.65 points (7 points maximum). The countries with higher assurance of GRI reports are Ireland (71.11%), Italy (61.24%), Austria (60.94%), and the Czech Republic (58.33%). The sample mean of assurance is 35.87%. Japan and the United States are, together with Turkey, the three countries with less assurance of GRI reports, and they are situated in the lower positions in the application level.

Table 2 presents the distribution of GRI reports by country and industry. Although the database of GRI reports included 38 industries, we used the Global Industry Classification Standard codes (two digits) plus an additional one for the aggregation of three GRI industries, Non-Profit Services, Public Agencies, and Universities. Over all OECD countries, the two economic sectors with more GRI proportion of reports are Financials (15.5%) and Materials (13.3%). The Non-Profit Services, Public Agencies and Universities category represents 6.2% of the GRI reports, and it is an indicator of the sustainability reporting practices for non-business organizations. Finally, 8.6% of GRI reports has not declared the type of industry and it is classified in the ‘Other’ category.

Dependent Variables

In our regression analysis, we used three dependent variables, one of them for the quantity of sustainability reports and the other two for the quality of sustainability reports. The first dependent variable, NumGRI, measures the G3 and G3.1 reports per million of inhabitants by country and year. The second dependent variable, LevelGRI, measure the application level of G3 and G3.1 reports by country and year. This variable is elaborated as follows: the G3 and G3.1 reports for each application level and country/year are divided by the total reports by country/year and the scale of Legendre and Coderre (2013) multiplies the results. The values of this scale are: level A + =7 points, level A = 6

Country	No. of Reports	Percent of total, %	Reports per Million of Inhabitants	Mean of Application Level	Mean of Assurance, %
Australia	457	5.90	3.465	3.807	38.00
Austria	182	2.35	3.622	4.441	60.94
Belgium	118	1.52	1.797	2.662	20.63
Canada	319	4.12	1.561	3.387	20.79
Chile	214	2.76	2.098	4.341	22.92
Czech Republic	11	0.14	0.127	4.250	58.33
Denmark	72	0.93	2.160	3.639	44.19
Finland	183	2.36	5.675	2.627	24.34
France	165	2.13	0.420	2.557	21.80
Germany	370	4.78	0.757	4.184	36.12
Greece	138	1.78	2.050	3.766	32.57
Hungary	125	1.61	2.085	3.533	30.98
Ireland	19	0.25	0.696	5.331	71.11
Israel	68	0.88	1.419	3.719	14.51
Italy	312	4.03	0.870	5.056	61.24
Japan	410	5.30	0.534	2.104	11.13
Korea (South)	496	6.41	1.672	4.490	51.38
Luxembourg	21	0.27	6.840	3.564	57.22
Mexico	160	2.07	0.222	4.213	49.21
Netherlands	380	4.91	3.811	3.847	41.08
New Zealand	65	0.84	2.767	2.772	28.49
Norway	89	1.15	2.794	3.202	30.47
Poland	48	0.62	0.210	2.674	13.22
Portugal	205	2.65	3.111	4.470	49.22
Spain	957	12.36	3.439	5.364	56.65
Sweden	428	5.53	7.580	3.095	40.79
Switzerland	277	3.58	5.881	3.702	28.23
Turkey	67	0.87	0.153	2.036	6.85
United Kingdom	357	4.61	0.945	3.795	41.77
United States	1,027	13.27	0.552	2.940	12.04
Total	7,740	100.00	2.310	3.652	35.87

Table 1. GRI reports for the period 2007–2012 in 30 OECD countries

points, level B + =5 points, level B = 4 points, level C + =3 points, level C = 2 points, and undeclared = 1 point. Finally, the third dependent variable, AssurGRI, measures the percentage of G3 and G3.1 reports by country/year that have used external assurance.

Independent and Control Variables

The independent variable is the countries' femininity. To measure the femininity, we use three alternatives: (a) SeatsFemale, as the proportion of seats held by women in national parliament (World Bank); (b) LaborFemale, as the female labor force participation rate (World Bank); and (c) Masculinity, which is obtained from Hofstede's cultural dimension (Hofstede, 1980; <https://geert-hofstede.com>). In addition, all models include four control variables: the Gross Domestic Product per capita (GDPPC) in natural logarithms, Industry1, Industry2, and Legal. The definitions of the last four variables are presented and their incorporation in our regressions justified.

The GDPPC is incorporated as a control variable to measure the effects of the economic conditions of a country, because higher levels of economic development could lead to higher levels of CSR activities and more sustainability reporting (Baughn *et al.*, 2007; Li *et al.*, 2010). The GDPPC data (current US\$) is obtained from the World Bank.

Literature demonstrates that the type of industry explains the quantity and the quality of the sustainability reports. In fact, there are industries with high environmental impacts, so-called environmentally sensitive

Country	1	2	3	4	5	6	7	8	9	10	11	T
Australia	15	84	28	38	16	6	79	15	62	51	63	457
Austria	15	23	26	12	7	16	36	6	13	12	16	182
Belgium	0	19	4	17	9	5	14	8	2	25	15	118
Canada	40	82	17	17	7	0	74	21	30	15	16	319
Chile	15	74	10	24	14	2	12	11	15	14	23	214
Czech Republic	0	5	0	0	0	0	3	0	0	2	1	11
Denmark	0	4	20	6	8	9	12	0	6	0	7	72
Finland	14	47	21	25	17	9	14	9	8	3	16	183
France	14	13	20	27	23	12	18	13	12	5	8	165
Germany	19	43	40	67	37	9	68	16	30	15	26	370
Greece	14	26	17	6	10	4	20	20	2	5	14	138
Hungary	10	3	10	11	13	7	25	16	16	3	11	125
Ireland	0	10	0	2	0	0	4	0	0	0	3	19
Israel	0	12	3	5	8	3	17	11	2	1	6	68
Italy	33	43	48	28	26	3	42	14	51	5	19	312
Japan	36	52	65	48	25	9	51	75	0	3	46	410
Korea (South)	51	47	95	47	30	13	55	25	33	49	51	496
Luxembourg	0	6	5	0	3	0	7	0	0	0	0	21
Mexico	15	30	22	17	24	13	20	5	0	6	8	160
Netherlands	10	30	41	45	49	22	79	25	21	28	30	380
New Zealand	8	0	7	12	6	0	1	3	17	5	6	65
Norway	13	11	21	13	10	1	10	1	4	0	5	89
Poland	13	3	9	1	7	0	3	1	9	0	2	48
Portugal	7	16	54	17	8	8	33	14	22	21	5	205
Spain	43	46	115	123	51	61	190	34	64	129	101	957
Sweden	3	54	58	68	25	12	87	23	5	24	69	428
Switzerland	6	38	31	24	25	19	62	16	29	5	21	277
Turkey	5	4	12	7	15	8	5	4	2	4	1	67
United Kingdom	29	65	37	54	39	12	66	17	7	18	13	357
United States	69	136	100	110	145	77	90	107	95	34	64	1,027
Total	497	1,026	936	871	658	340	1,197	510	557	482	666	7,740
Percent	6.4	13.3	12.1	11.3	8.5	4.4	15.5	6.6	7.2	6.2	8.6	100

Table 2. Distribution of GRI reports by country and type of industry

1 = Energy; 2 = Materials; 3 = Industrials; 4 = Consumer Discretionary; 5 = Consumer Staples; 6 = Health Care; 7 = Financials; 8 = Information Technology & Telecommunication; 9 = Utilities; 10 = Non-Profit Services, Public Agency & Universities; 11 = Other; T = Total.

industries, and industries have a high political visibility because they have greater proximity to consumers, investors, or employees. Consequently, the companies of environmentally sensitive industries disclose more CSR information and their reports are externally assured in more proportion than companies installed in other industries because they seek the acceptance of their activities from stakeholders (Brammer & Pavelin, 2008; Kolk & Perego, 2010; Moroney *et al.*, 2012; Toppinen *et al.* 2012; Sierra *et al.*, 2013; Alonso-Almeida *et al.*, 2014). Thus, Industry1 is a control variable that measures the percentage of GRI reports disclosed by the high-risk industries over the total GRI reports by country and year. For the classification as a high-risk industry, we used Legendre and Coderre's criteria (2013): petroleum, chemical, forest and paper, automobile, airline, oil, agriculture, liquor and tobacco, and media and communications.

In addition, we have incorporated Industry2 as a control variable to measure the effect of financial services industries because the analyzed period corresponds to the years of the global financial crisis. Over this period, the financial industry has been under public scrutiny and its companies have disclosed CSR reports as a strategy to legitimize their behavior toward society (Andrikopoulos *et al.*, 2014; Lock & Seele, 2015). This variable is defined

as the percentage of GRI reports disclosed by the financial services industry over the total GRI reports by country and year.

The last control variable is Legal, a dichotomous variable that takes the value one for common-law countries (Australia, Canada, Ireland, Israel, New Zealand, the United Kingdom, and the United States) and the value zero for civil-law countries. Thus, Simnett *et al.* (2009) and Kolk & Perego (2010) found that companies domiciled in civil-law countries are more likely to have a sustainability reports assured. However, Herda *et al.* (2014) did not find any significant differences between civil-law and common-law countries in their probabilities of assuring the sustainability reports. The study by Garcia-Sánchez *et al.* (2016) also showed that companies located in civil-law countries produced more sustainability reports than those located in common-law countries.

Results

Descriptive Statistics

Table 3 provides descriptive statistics of the variables and correlations. NumGRI is significantly correlated with all independent variables, with the exception of Industry2, and the higher positive association is with SeatsFemale variable. The negative correlation of NumGRI with Industry1 is surprising. The LevelGRI variable is only positively correlated with Industry1 and Industry2. AssurGRI is not significantly correlated with Industry1, but shows a significant correlation with Industry2, and somewhat lower with GDPPC and SeatsFemale.

Regression Results

To test our hypotheses, we used a balanced panel data and we estimated all models for pooled ordinary least squares and for random effects. To check for multicollinearity, we have calculated the variance inflation factor (VIF) for all regressions, which is less than 2.2 for all independent variables. Thus, multicollinearity is not a problem in our panel data models. However, our models have a heteroscedasticity problem (determined from Levene's test), and have an autocorrelation problem (verified with Wooldridge's test). Therefore, in the presence of heteroscedasticity and autocorrelation we have estimated the models with feasible general least squares method (FGLS) and panel corrected standard errors (PCSE). Although there is literature suggesting that the estimations of PCSE models are more accurate for finite samples (Beck & Katz, 1995), the tables presented in this section include the results of the regressions FGLS and PCSE.

Table 4 reports the results of our estimations to contrast Hypothesis 1. The three variables used to measure femininity are statistically significant and with the expected sign. SeatsFemale and LaborFemale have a positive effect on NumGRI, and the coefficient of Masculinity shows a negative relation with NumGRI. The results also reveal that the effect of GDPPC on NumGRI is positive and significant in all models. The Legal variable has a negative effect on NumGRI in all models. This result supports the idea that civil-law countries provide more GRI reports per million inhabitants than common-law countries. The Industry1 variable presents negative coefficients that are statistically significant with all PCSE estimations, but only in one of the models estimated by FGLS. Additionally, the Industry2 variable does not reach statistical significance in any of our estimated models.

Therefore, the results show that countries with higher femininity orientation provide higher quantity of GRI reports per million of inhabitants. The estimations have included the femininity variable in its three alternative dimensions (political, economic, and cultural) and the results have confirmed the predictions for each of these dimension. Although our results confirm the positive effect of GDPPC on NumGRI, they do not confirm the expected positive effect of the type of industries (Industry1 and Industry2) on the number of GRI reports per million inhabitants. One possible explanation for this result is that our research has been carried out exclusively using different measures of variables at macro level (country level).

Tables 5 and 6 show the results to contrast Hypothesis 2. When the quality of the sustainability reports is measured by the application level of GRI reports (Table 5), we find that only the Industry1 and Industry2 variables are significant and have a positive coefficient in the FGLS and PCSE models. The same results are obtained when the quality of the sustainability reports is measured by the percentage of GRI reports with external assurance (Table 6). Consequently, the results of our econometric models with panel data do not provide support for Hypothesis 2; that is, the femininity of the countries does not affect the quality of GRI reports. The GDPPC and Legal variables are not significant in any of the estimations presented in Tables 5 and 6. However, the two variables

Variable	Mean	Std. Dev.	Min	Max	1	2	3	4	5	6	7	8	9	10
1. NumGRI	2.310	2.276	0.014	12.711	1.000									
2. LevelGRI	3.652	1.132	1.000	7.000	0.075	1.000								
3. AssurGRI	0.359	0.223	0.000	1.000	0.178**	0.829***	1.000							
4. SeatsFemale	25.162	10.227	7.900	47.000	0.465***	0.012	0.139*	1.000						
5. LaborFemale	51.837	7.954	23.600	62.800	0.355***	0.029	0.061	0.556***	1.000					
6. Masculinity	51.000	22.311	5.000	95.000	-0.334***	0.036	-0.001	-0.582***	-0.311***	1.000				
7. LgDPPC	10.267	0.631	8.891	11.364	0.392***	-0.005	0.163**	0.455***	0.652***	-0.180**	1.000			
8. Industry1	0.285	0.153	0.000	1.000	-0.163**	0.184**	0.088	-0.082	0.140*	0.026	-0.149**	1.000		
9. Industry2	0.139	0.117	0.000	1.000	0.111	0.263***	0.347***	-0.019	0.032	0.096	0.269***	-0.296***	1.000	
10. Legal	0.233	0.424	0.000	1.000	-0.152**	0.010	-0.087	-0.191**	0.387***	0.202***	0.191**	0.077	-0.027	1.000

Table 3. Descriptive statistics and correlation matrix
Number of observations: 180. Statistical significance:

*** < 0.01,

** < 0.05,

* < 0.10.

Independent Variables	FGLS			PCSE		
	(1)	(2)	(3)	(1)	(2)	(3)
SeatsFemale	0.061*** (0.012)			0.068** (0.027)		
LaborFemale		0.094*** (0.016)			0.115*** (0.035)	
Masculinity			−0.028*** (0.006)			−0.025** (0.012)
LgGDPPC	0.760*** (0.198)	0.637*** (0.1743)	0.882*** (1.741)	1.182*** (0.389)	0.848** (0.423)	1.537*** (0.342)
Industry1	−0.255 (0.308)	−0.761* (0.438)	−0.254 (0.289)	−0.952* (0.552)	−1.448** (0.663)	−1.011* (0.543)
Industry2	−0.330 (0.523)	−0.371 (0.614)	0.064 (0.510)	−0.755 (1.308)	−0.659 (1.336)	−0.761 (1.224)
Legal	−0.640** (0.300)	−1.585*** (0.311)	−0.581* (0.324)	−0.908** (0.412)	−1.961*** (0.458)	−1.071** (0.424)
Intercept	−7.418*** (1.782)	−9.090*** (1.675)	−5.822*** (1.809)	−11.154*** (3.566)	−11.607 (3.446)	−11.759*** (3.419)
Times dummies	Yes	Yes	Yes	Yes	Yes	Yes
Wald Chiz	80.98***	66.70***	79.64***	92.03***	95.70***	91.13***
R-squared				0.141	0.165	0.141
Number of observations	180	180	180	180	180	180
Number of countries	30	30	30	30	30	30
Times periods	6	6	6	6	6	6

Table 4. The impact of femininity on the number of GRI reports

Statistical significance:

*** < 0.01,

** < 0.05,

* < 0.10.

Standard errors are reported in parentheses.

Independent Variables	FGLS			PCSE		
	(1)	(2)	(3)	(1)	(2)	(3)
SeatsFemale	0.009 (0.008)			0.000 (0.013)		
LaborFemale		−0.005 (0.137)			−0.019 (0.019)	
Masculinity			−0.002 (0.002)			0.001 (0.004)
LgGDPPC	−0.136 (0.119)	−0.138 (0.171)	−0.064 (0.098)	−0.030 (0.209)	0.120 (0.245)	−0.019 (0.168)
Industry1	2.222*** (0.417)	2.185*** (0.436)	2.185*** (0.417)	2.502*** (0.704)	2.580*** (0.706)	2.505*** (0.702)
Industry2	2.910*** (0.521)	2.787*** (0.535)	2.891*** (0.527)	2.853*** (0.946)	2.807*** (0.934)	2.834*** (0.946)
Legal	−0.063 (0.131)	−0.118 (0.126)	−0.102 (0.124)	0.017 (0.270)	0.111 (0.312)	0.001 (0.285)
Intercept	3.362*** (1.152)	2.636*** (1.298)	2.957 (1.065)	2.415 (1.902)	1.825 (1.875)	2.250 (1.786)
Times dummies	Yes	Yes	Yes	Yes	Yes	Yes
Wald Chiz	112.46***	98.82***	111.12***	31.36***	32.10***	31.50***
R-squared				0.304	0.304	0.306
Number of observations	180	180	180	180	180	180
Number of countries	30	30	30	30	30	30
Times periods	6	6	6	6	6	6

Table 5. The impact of femininity on the application level of GRI reports

Statistical significance:

*** < 0.01,

** < 0.05,

* < 0.10.

Standard errors are reported in parentheses.

reflecting the type of industries (Industry1 and Industry2) present positive and significant effects on the quality of sustainability information. Therefore, the quality of GRI reports is directly related with the type of industry, and countries with a higher proportion of GRI reports submitted by high-risk industries and financial services industry

Independent Variables	FGLS			PCSE		
	(1)	(2)	(3)	(1)	(2)	(3)
SeatsFemale	0.005*** (0.002)			0.002 (0.002)		
LaborFemale		−0.001 (0.003)			−0.005 (0.004)	
Masculinity			−0.000 (0.000)			0.000 (0.001)
LgGDPPC	−0.023 (0.032)	0.047 (0.037)	0.034 (0.025)	0.032 (0.043)	0.083 (0.053)	0.050 (0.036)
Industry1	0.234** (0.094)	0.211** (0.986)	0.202** (0.095)	0.413*** (0.152)	0.434*** (0.152)	0.414*** (0.151)
Industry2	0.667*** (0.118)	0.608*** (0.119)	0.623*** (0.120)	0.668*** (0.191)	0.645*** (0.187)	0.655*** (0.189)
Legal	−0.016 (0.042)	−0.045 (0.042)	−0.050 (0.042)	−0.044 (0.058)	−0.031 (0.067)	−0.060 (0.061)
Intercept	0.237 (0.297)	−0.232 (0.290)	−0.174 (0.271)	−0.271 (0.394)	−0.514 (0.409)	−0.419 (0.382)
Times dummies	Yes	Yes	Yes	Yes	Yes	Yes
Wald Chiz	51.79***	42.44***	44.50***	27.16***	27.86***	27.61***
R-squared				0.235	0.241	0.235
Number of observations	180	180	180	180	180	180
Number of countries	30	30	30	30	30	30
Times periods	6	6	6	6	6	6

Table 6. The impact of femininity on the external assurance of GRI reports

Statistical significance:

*** < 0.01,

** < 0.05,

* < 0.10.

Standard errors are reported in parentheses.

have a higher application level of GRI reports that is also subject to assurance in a higher percentage. Finally, the results indicate that the femininity of the country, like its Gross Domestic Product per capita or the traditional dichotomy civil laws/common laws, has no significant influence on the quality of GRI reports.

Sensitivity Analysis

To test the sensitivity of our results, we introduced the following modifications. On the one hand, we deleted the GDPPC variable due to its high correlation with SeatsFemale and LaborFemale. The results obtained are as follows. In the models with NumGRI as a dependent variable, the regression coefficients of the three variables that measure the femininity are significant and present the expected sign, but the Legal variable only is significant in the econometric regressions when the femininity is measured through the LaborFemale variable. These changes in the statistical significance of the Legal variable suggests that its influence on NumGRI is conditioned by its interaction with the GDPPC variable. In addition, the sign of the coefficient of Industry1 continues to be negative, but is statistically significant in all estimated models. In the models with LevelGRI and AssurGRI as dependent variables, the results are identical: only the regression coefficients of Industry1 and Industry2 variables are significant.

On the other hand, we have changed the variable that measures the legal system of the countries (Legal) by a new variable named 'Rule of Law', that is one of the Worldwide Governance Indicators developed by Kaufmann *et al.* (1999) and available at databank.worldbank.org/. The Rule of Law has been used in CSR by Simnett *et al.* (2009) and Herda *et al.* (2014). After carrying out this substitution, the results obtained in the models with NumGRI as a dependent variable are maintained for SeatsFemale, LaborFemale, and Masculinity variables. The Rule of Law variable is significant with SeatsFemale and with LaborFemale, but not with the masculinity variable. However, the GDPPC variable is only statistically significant in the FGLS model that incorporates the masculinity variable. The changes in the significance of this GDPPC control variable can be explained by its high correlation with Rule of Law (0.80). In fact, the correlation of the Rule of Law is also high with LaborFemale (0.78) and with SeatsFemale (0.45). The VIF for the Rule of Law variable is between 3.15 and 4.21. In addition, the results are maintained in the models with LevelGRI and AssurGRI as dependent variables.

Conclusions and Implications

The objective of this research was to analyze the effect of femininity on the sustainability reporting in developed countries. According to institutional theory, we assume that organizations that operate in the same country are quite homogeneous in their behavior with stakeholders because they have the same cultural pressure. We have measured femininity with the political participation of women in national parliaments, the economic participation of women in the labor force, and the masculinity coefficients of Hofstede (1980).

The results show that there is a positive and very significant relationship between the femininity of a country and the quantity of sustainability reports, measured by the number of GRI reported per million inhabitants, and controlled for the gross domestic product per capita, the type of legal system, and the type of industry. However, the femininity of the country does not affect the quality of sustainability reports, measured by the application level of GRI reports and the external assurance of GRI reports. The quality of the sustainability disclosure seems to be exclusively related to the type of industry. Thus, the high-risk industries, with an environmentally high impact and high visibility such as media and communications, and the financial services industries are the ones that disclose GRI reports with higher quality.

In addition, our study finds out that the relationship between femininity and CSR is not always positive because it depends on the CSR metric used. Therefore, our results cannot be compared with any previous study because we have used other measures for CSR and our work has been carried out at country level. However, the CSR measure used by Legendre and Coderre (2013) has been also used in our study at the country level, and the results confirm the importance of the type of industry of OECD countries in their CSR reporting.

Managers and politicians could use the main results of our research as a strategic and planning tool to increase the sustainability reporting both at company and country level. Economic development favors the disclosure of comparable sustainability information between countries, but other factors also have a very positive effect on these practices. The degree of femininity of the countries positively affects the demand for GRI reports. Thus, the social pressure on organizations to increase the quantity and quality of CSR reports will increase as countries also increase their femininity and reduce their gender differences. This implication is important, since the external factors analyzed do not seem to have a significant effect on the voluntary assurance of sustainability reports.

Our research has some implications for sustainability reporting practice because it points out factors that influence the quantity and quality of non-financial information. Undoubtedly, economic development and increasing femininity in countries will affect the quantity of GRI reports, but these changes may be slow over time and may have a minor effect on the quality of this information. Consequently, political institutions can develop regulatory actions and adopt legislative changes that allow countries to accelerate and anticipate future demands for non-financial information. Institutional requirements appear to be a necessary tool to ensure a minimum level of disclosure of sustainability information as well as to ensure credibility through external assurance of GRI reports.

Finally, and following the results obtained, the measures that favor a greater female participation in the economy or in politics will cause increases in the voluntary information of sustainability; and vice versa, the changes toward a greater masculinity in politics or in the economy will have a negative effect. However, these measures favoring femininity of the countries do not imply that sustainability reports were issued with higher quality. The quality of sustainability reports at country level seems to depend on the potential political and social costs of their industries. Therefore, companies in industries with greater political visibility will disclose sustainability reports with greater quality because they seek their legitimation with stakeholders.

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